Electro-Techs Inspect Workings of Milwaukee Transmission Station

It was a cold, raw day when members of the term III, electro-tech class, braved a sleet storm driven by a north-west wind, to inspect the workings of the WISN transmission station, located on the southern outskirts of Milwaukee.

At the beginning of the tour the class was separated into two groups, with two men familiar to MSOE alumni and faculty acting as guides. They were Charles Brennan, transmitter supervisor and former instructor in radio at MSOE, and N. J. Richards, of the station's engineering department, who is a former student and holder of an honorary electrical engineering degree from the college.

Charles Brennan, transmitter supervisor at WISN and former MSOE instructor, has his back to the wall as students fire questions at him about the workings of the transmission station.

Outside, a part of another group stands ankle deep in snow, facing the sleet, as N. J. Richards, station engineer, points out the workings of one of the towers.

Members of the faculty and station engineers get together and examine the station in detail. From left to right, Brennan; Richards; Fred J. Van Zeeland, director of the college of electrical engineering; Sidney Eng, industrial relations director; William P. Gainer, station engineer, former student and holder of an honorary electrical engineering degree from MSOE; and Ernest L. Bebagen, instructor of electronics laboratory.

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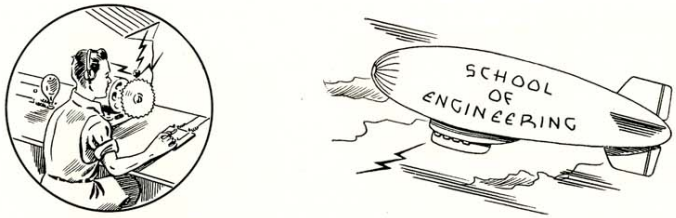


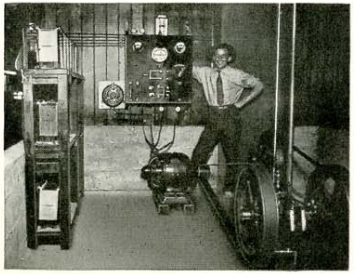
Wireless-operated zeppelin built entirely by MSOE students and operated at the 1911 exhibition in Milwaukee's new auditorium.

Theory and practice were combined early in the history of the school. The student spent one half of his time in the laboratories and shop, working with tools, machinery and apparatus, according to the theories he learned from his books and lectures. The books were specially prepared, edited and compiled by the president in connection with the instructors in charge of the various departments. This form of literature simplified the theory of the subject, and still left it thorough according to the requirements of the electrical practice.

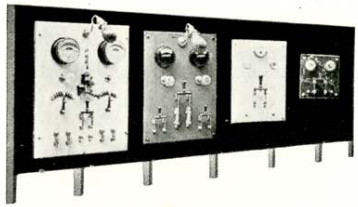
At the end of every school year, a great exhibition was held at the school showing all the drawings, blueprints, electrical equipment, and machinery built in the school shops. Students were very proud to show their parents and friends the drawings they had made, and the machinery and apparatus they had built according to their own blueprints.

When the Milwaukee Merchant and Manufacturers Association celebrated its twenty-fifth anniversary in 1911 at the new Auditorium, the MSOE was invited to exhibit and demonstrate a twenty-five foot model of a Zeppelin. According to public opinion this display was one of the outstanding attractions at the industrial exhibition. The airship was operated completely by wireless, and startled the visitors, since wireless was still in its infancy.

First storage battery for automobile ignition.



Country home electric lighting plant built by students.



Many types of switchboards were built in MSOE shops by students.

The wireless control equipment was designed and built by the students of the school. The sending station consisted of a rotary spark gap, and the tuning coils were located at the end of the huge hall of the auditorium. The wireless receiving apparatus was installed in the gondola of the zeppelin, consisting of a Marconi cohere, sensitive relays, and automatic control switches. This ingenious arrangement permitted the operation of the electrical equipment at the moment the electrical waves were transmitted from the sending station. Student operators sent Hertzian waves from the rotary spark gap. These waves, passing through the air, struck the receiving station installed in the gondola. First the alarm bell sounded the beginning of the airship's trip; then the propeller began to hum, setting the zeppelin in motion. A few seconds later the lights were turned on, a cannon was discharged, and the flight of the ship came to a climax when a flag unfurled and a phonograph struck up a patriotic air.

Need for Expansion

Many men, now leading engineers and draftsmen, received this new practical education during the first ten years of the existence of the school, and found employment in Milwaukee's industries immediately upon graduation. Because a great number of young men had chosen electrical engineering with its broad opportunities as their profession, and because the demand for MSOE graduates grew so rapidly, enrollments increased to such an extent that more lecture rooms and laboratories and larger and more complete work shops became necessary.

Engine built by students, installed in a motor boat which won a race on the Milwaukee River.

First twin-cylinder 2-cycle engine, speed 1500 R.P.M., 6 H.P., weight 65 lbs.